



International Civil Aviation Organization


ASBU/SIP/Lima/2012-WP/17

System Wide Information Management

Saulo Da Silva

Workshop on preparations for ANConf/12 – ASBU methodology
(Lima, 16-20 April 2012)

Overview



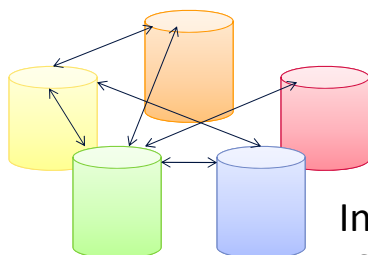
- The Problem
- The Solution
- The Topology
- The Concept
- Initiatives

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The problem



- PROBLEM in current Air Navigation Systems ?



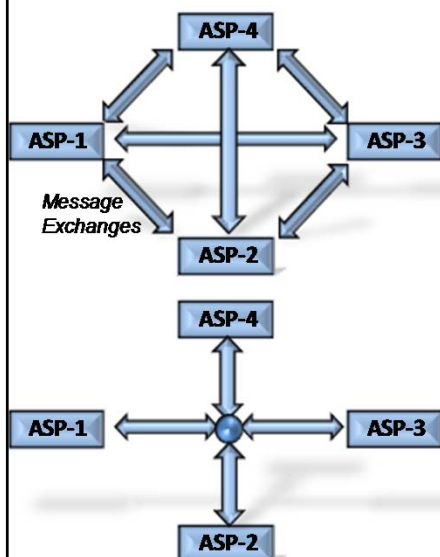
Information is:

- Siloed
- Duplicated
- Inconsistently updated

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3

System Wide Information Management



Now:

- Message exchange tailored locally
- Relevant information flow between 2 ASPs is not visible to interested 3rd
- Does not facilitate collaboration
- Change affects many interfaces

Future:

- Message exchanges propagate system-wide
- Collaboration-friendly
- Consistent information visible to all interested and authorized parties
- Change affects fewer interfaces

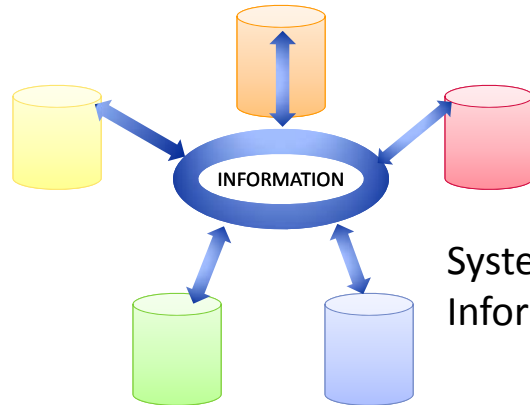
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The solution



SOLUTION



System Wide
Information Management

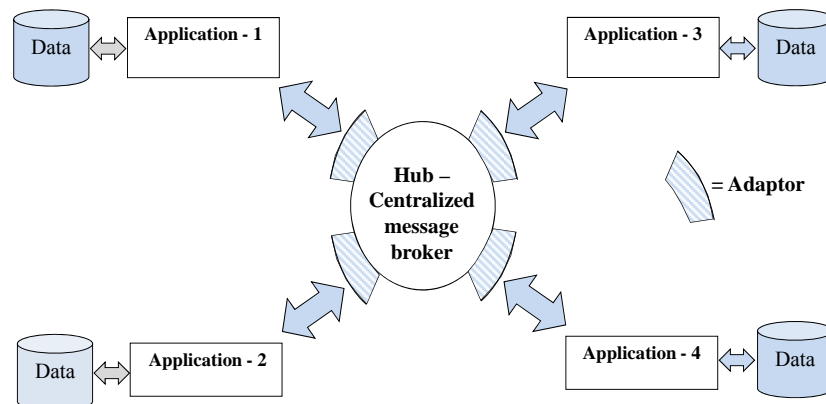
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System Wide Information Management

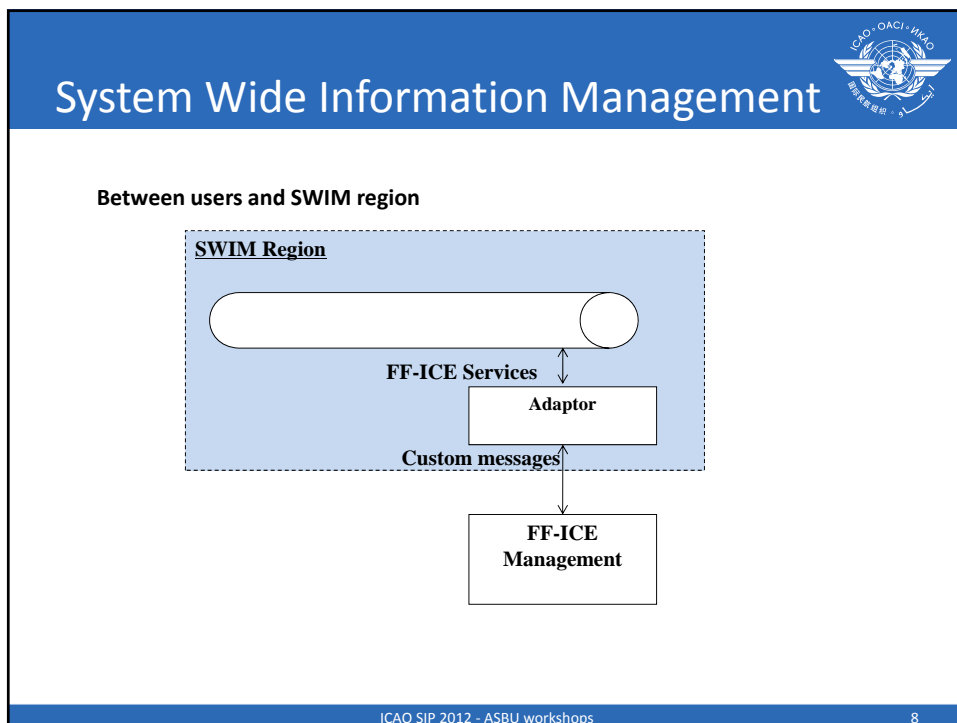
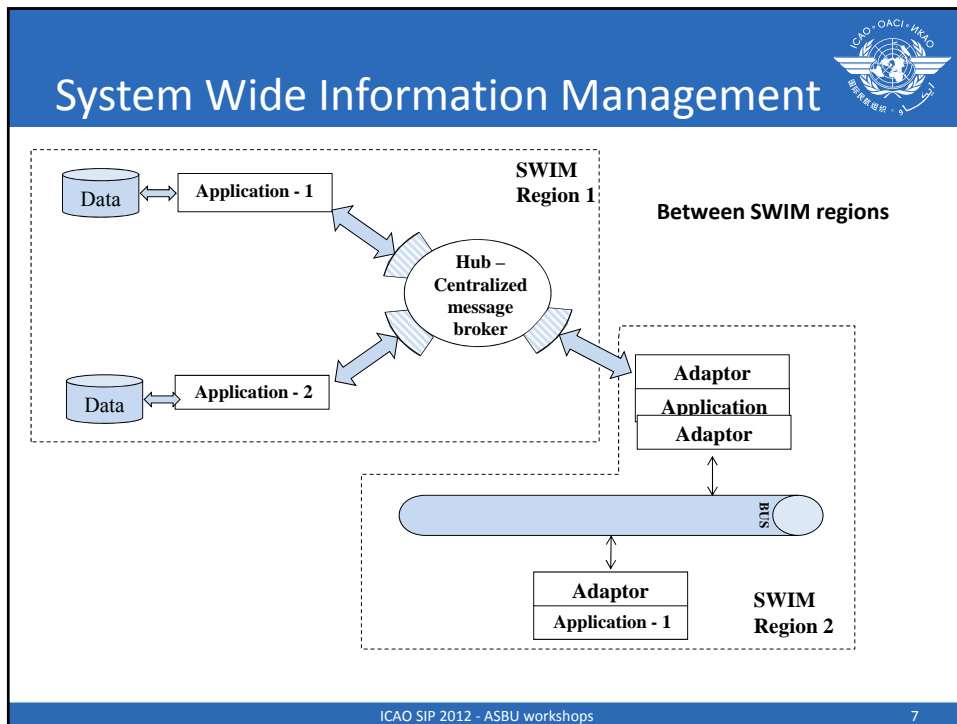


Topology



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System Wide Information Management



PROGRAMS



NextGen



Also exist in:
Australia
Republic of Korea...

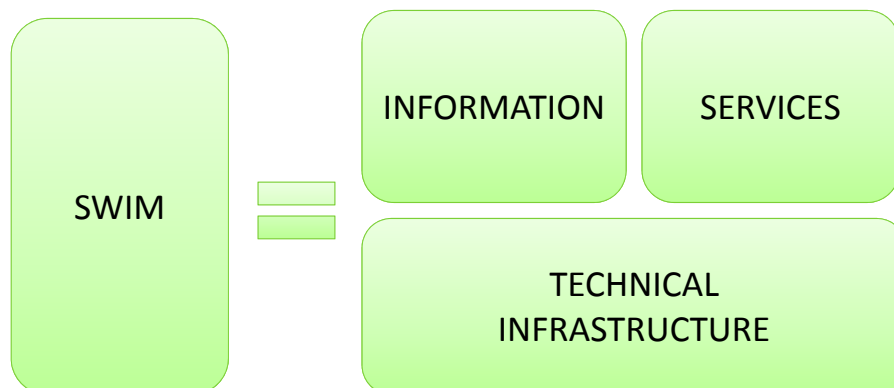
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System Wide Information Management



Definition



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System Wide Information Management



SWIM INFORMATION DOMAINS

Aeronautical Information	Flight	Meteorology
• AIXM	• FIXM	• WXXM
Surveillance
•	•	•

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System Wide Information Management



SWIM SERVICES

- Manage SWIM Information
- Access SWIM Information
- Publish SWIM Information
- Update SWIM Information
- ...

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System Wide Information Management



SWIM TECHNICAL INFRASTRUCTURE

Relies on:

- IP Networks (LANs, WANs, backbones)
- Off-the-shelf middleware technology

But remember:

- The network is only one part of SWIM

System Wide Information Management



INITIATIVES

- AIM
- AIXM
- WXXM
- FIXM

System Wide Information Management



QUESTIONS

- Timely development of standards
- Availability of network infrastructure
- Incorporation of aircraft
- Governance
- Certification

System Wide Information Management



ICAO

- Global Air Navigation Plan
- Global SWIM concept
- Global coordination
- Promoting standards
- Facilitating deployment
- ATM Requirements and Performance Panel

System Wide Information Management



ACRONYMS

- ATS: Air Traffic Services
- AIDC: ATS Interfacility Data Communication
- AIM: Aeronautical Information Management
- AIXM: Aeronautical Information eXchange Model
- ATMRPP: ATM Requirements and Performance Panel
- CARATS: Collaborative Actions for Renovation of Air Traffic Systems
- FIXM: Flight Information eXchange Model
- FO: Flight Object
- GANP: Global Air Navigation Plan
- ICAO: International Civil Aviation Organisation
- IP: Internet Protocol
- LAN: Local Area Network
- NextGen: Next Generation Air Transportation System
- SESAR: Single European Sky ATM Research
- SWIM: System Wide information Management
- TSA: Temporary Segregated Area
- WAN: Wide Area Network
- WXXM: Weather eXchange Model

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